

layer on a substrate; disposing thereon a photolithographic mask having a pattern of the wall-like projections, followed by exposure; without development, forming a second photosensitive material layer on the first photosensitive material layer; disposing thereon a photolithographic mask having a pattern of the barrier ribs, followed by exposure and development of the first and second photosensitive material layers simultaneously, thereby producing a master having the wall-like projections and the barrier ribs formed on the substrate," as recited in independent claim 14. Stated differently, Sano et al. does not provide the steps of, for example, forming the wall-like projections and the barrier ribs simultaneously by forming two photosensitive material layers and developing them simultaneously. Further, Sano et al. does not teach or suggest, among other things, "forming a barrier rib pattern of a light-tight material on a light-transmissive substrate; forming thereon a first photosensitive material layer; disposing thereon a photolithographic mask having a pattern of the wall-like projections, followed by exposure; without development, forming a second photosensitive material layer on the first photosensitive material layer; exposing the resulting substrate from a rear surface thereof, followed by [exposure] developing, thereby producing a master having the wall-like projections and the barrier ribs formed on the substrate," as recited in independent claim 15. Stated differently, Sano et al. does not provide the steps of, for example, forming the wall-like projections and the barrier ribs simultaneously by forming two photosensitive material layers and developing them simultaneously in addition to performing exposure from a rear surface of a substrate using a light-transmissive substrate. Further, Sano et al. does not teach or suggest, among other things, "forming a convex of a sandblast-resistant material on the substrate; thereafter forming a barrier rib material layer of good sandblastability on the entire substrate; forming thereon a sandblast-resistant pattern using a photolithographic technique; and sandblasting the barrier rib material layer via the pattern," as recited in independent claim 16. Stated differently, Sano et al. does not provide the steps of, for example, forming the wall-like projections and the barrier ribs simultaneously by forming a sandblast-resistant convex and forming thereon the barrier rib material layer for sandblasting. Further, Sano et al. does not teach or suggest, among other things, "forming first wall-like projections and second wall-like projections having the same height and crossing each other on the substrate, and forming projections on either one of the first and second wall-like projections to the height of the barrier ribs," as recited in independent claim 17. Stated differently, Sano et al. does not provide, for example, forming the barrier ribs on the wall-like projections crossing each other. Further, Sano et al. does not teach or suggest, among other things, forming the wall-like projections and the barrier ribs directly on the

substrate by using the fabricating methods as recited in independent claims 14 and 15, respectively. Further, Sano et al. does not teach or suggest, among other things, "forming the projections and the barrier ribs simultaneously by a single sandblasting as recited in independent claim 20. Finally, Sano et al. does not teach or suggest, among other things, forming the wall-like projections by "applying a projection material through a nozzle onto boundary areas between discharge cell areas in the elongate grooves between the barrier ribs on one substrate on which the barrier ribs are formed," as recited in independent claim 21.

In view of the above points, Applicants respectfully submit that Sano et al. does not teach every feature as recited in independent claims 14-21. In order for a document to anticipate a claim, Applicants submit that the document must teach every element of the claim. See MPEP 2131. Further, in the event that the Office Action is relying on the theory of inherency in any manner, "the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). See also MPEP 2112. Accordingly, since Sano et al. does not teach or suggest each of the features as recited in independent claims 14-21, it is respectfully submitted that this document cannot be properly used to reject these claims or the claims that depend therefrom under 35 USC §102.

For at least the above reasons, withdrawal of the rejection and allowance of claims 14-22 are earnestly solicited.

#### **REJECTION UNDER 35 U.S.C. 103**

Claims 5-6 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. and further in view of JP 6-275202. It is respectfully submitted that these claims have been canceled without prejudice or disclaimer, thus rendering this rejection moot. Accordingly, withdrawal of this rejection is earnestly solicited.

#### **CONCLUSION**

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: Sept 13, 2002

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

Please CANCEL claims 1-13 without prejudice or disclaimer.

Please AMEND the following claims:

14. (ONCE AMENDED) A method [for] of fabricating a plasma display panel [as recited in claim 1] provided with a pair of substrates disposed opposite each other to form a discharge space therebetween, a plurality of band-like barrier ribs arranged in parallel on one of the substrates on a rear or front side to partition the discharge space, and fluorescent layers provided in elongated grooves between the barrier ribs, the plasma display panel being characterized in that wall-like projections which are lower than the barrier ribs and high enough to increase a formation area of the fluorescent layers are provided in the elongated grooves between the barrier ribs and the fluorescent layers are formed in the grooves including the wall-like projections between the barrier ribs, the method comprising:

in the formation of the wall-like projections and the barrier ribs on one of the substrates on the rear or front side of the plasma display panel,

forming a first photosensitive material layer on a substrate;

disposing thereon a photolithographic mask having a pattern of the wall-like projections, followed by exposure;

without development, forming a second photosensitive material layer on the first photosensitive material layer;

disposing thereon a photolithographic mask having a pattern of the barrier ribs, followed by exposure and development of the first and second photosensitive material layers simultaneously, thereby producing a master having the wall-like projections and the barrier ribs formed on the substrate; and

producing a transfer mold using the master, filling a barrier rib material in concaves of the transfer mold and transferring the barrier rib material onto the substrate for the plasma display panel, or producing a pressing mold using the master, pressing a barrier rib material on the substrate for the plasma display panel, thereby forming the wall-like projections and the barrier ribs.

15. (ONCE AMENDED) A method [for] of fabricating a plasma display panel [as recited in claim 1,] provided with a pair of substrates disposed opposite each other to form a

discharge space therebetween, a plurality of band-like barrier ribs arranged in parallel on one of the substrates on a rear or front side to partition the discharge space, and fluorescent layers provided in elongated grooves between the barrier ribs, the plasma display panel being characterized in that wall-like projections which are lower than the barrier ribs and high enough to increase a formation area of the fluorescent layers are provided in the elongated grooves between the barrier ribs and the fluorescent layers are formed in the grooves including the wall-like projections between the barrier ribs, the method, comprising:

in the formation of the wall-like projections and the barrier ribs on one of the substrates on the rear or front side of the plasma display panel,

forming a barrier rib pattern of a light-tight material on a light-transmissive substrate;

forming thereon a first photosensitive material layer;

disposing thereon a photolithographic mask having a pattern of the wall-like projections, followed by exposure;

without development, forming a second photosensitive material layer on the first photosensitive material layer;

exposing the resulting substrate from a rear surface thereof, followed by [exposure] developing, thereby producing a master having the wall-like projections and the barrier ribs formed on the substrate; and

producing a transfer mold using the master, filling a barrier rib material in concaves of the transfer mold, and transferring the barrier rib material onto the substrate for the plasma display panel, or

producing a pressing mold using the master and pressing a barrier rib material on the substrate for the plasma display panel,

thereby forming the wall-like projections and the barrier ribs.

16. (ONCE AMENDED) A method [for] of fabricating a plasma display panel [as recited in claim 1,] provided with a pair of substrates disposed opposite each other to form a discharge space therebetween, a plurality of band-like barrier ribs arranged in parallel on one of the substrates on a rear or front side to partition the discharge space, and fluorescent layers provided in elongated grooves between the barrier ribs, the plasma display panel being characterized in that wall-like projections which are lower than the barrier ribs and high enough to increase a formation area of the fluorescent layers are provided in the elongated grooves between the barrier ribs and the fluorescent layers are formed in the grooves including the wall-

like projections between the barrier ribs, the method comprising:

in the formation of the wall-like projections and the barrier ribs on one of the substrates on the rear or front side of the plasma display panel,

forming a convex of a sandblast-resistant material on the substrate;

thereafter forming a barrier rib material layer of good sandblastability on the entire substrate;

forming thereon a sandblast-resistant pattern using a photolithographic technique; and

sandblasting the barrier rib material layer via the pattern,

thereby forming the wall-like projections and the barrier ribs.

17. (ONCE AMENDED) A method [for] of fabricating a plasma display panel [as recited in claim 1,] provided with a pair of substrates disposed opposite each other to form a discharge space therebetween, a plurality of band-like barrier ribs arranged in parallel on one of the substrates on a rear or front side to partition the discharge space, and fluorescent layers provided in elongated grooves between the barrier ribs, the plasma display panel being characterized in that wall-like projections which are lower than the barrier ribs and high enough to increase a formation area of the fluorescent layers are provided in the elongated grooves between the barrier ribs and the fluorescent layers are formed in the grooves including the wall-like projections between the barrier ribs, the method comprising:

in the formation of the wall-like projections and the barrier ribs on one of the substrates on the rear or front side of the plasma display panel,

forming first wall-like projections and second wall-like projections having the same height and crossing each other on the substrate, and

forming projections on either one of the first and second wall-like projections to the height of the barrier ribs,

thereby forming the wall-like projections and the barrier ribs.

18. (ONCE AMENDED) A method [for] of fabricating a plasma display panel [as recited in claim 1,] provided with a pair of substrates disposed opposite each other to form a discharge space therebetween, a plurality of band-like barrier ribs arranged in parallel on one of the substrates on a rear or front side to partition the discharge space, and fluorescent layers provided in elongated grooves between the barrier ribs, the plasma display panel being characterized in that wall-like projections which are lower than the barrier ribs and high enough

to increase a formation area of the fluorescent layers are provided in the elongated grooves between the barrier ribs and the fluorescent layers are formed in the grooves including the wall-like projections between the barrier ribs, the method comprising:

in the formation of the wall-like projections and the barrier ribs on one of the substrates on the rear or front side of the plasma display panel,  
forming a first photosensitive barrier rib material layer on the substrate;  
disposing thereon a photolithographic mask having a pattern of the wall-like projections, followed by exposure;  
without development, forming a second photosensitive barrier rib material layer on the first photosensitive barrier rib material layer; and  
disposing thereon a photolithographic mask having a pattern of the barrier [ibs] ribs, followed by exposure and development,  
thereby forming the wall-like projections and the barrier ribs.

19. (ONCE AMENDED) A method [for] of fabricating a plasma display panel [as recited in claim 1,] provided with a pair of substrates disposed opposite each other to form a discharge space therebetween, a plurality of band-like barrier ribs arranged in parallel on one of the substrates on a rear or front side to partition the discharge space, and fluorescent layers provided in elongated grooves between the barrier ribs, the plasma display panel being characterized in that wall-like projections which are lower than the barrier ribs and high enough to increase a formation area of the fluorescent layers are provided in the elongated grooves between the barrier ribs and the fluorescent layers are formed in the grooves including the wall-like projections between the barrier ribs, the method comprising:

in the formation of the wall-like projections and the barrier ribs on one of the substrates on the rear or front side of the plasma display panel,  
forming a pattern of the barrier ribs of a light-tight material on a light-transmissive substrate;  
forming thereon a first photosensitive barrier rib material layer;  
disposing thereon a photolithographic mask having a pattern of the wall-like projections, followed by exposure;  
without development, forming a second photosensitive barrier rib material layer on the first photosensitive barrier rib material layer; and  
performing exposure from a rear face of the substrate, followed development,

thereby forming the wall-like projections and the barrier ribs.

20. (ONCE AMENDED) A method [for] of fabricating a plasma display panel [as recited in claim 9,] provided with a pair of substrates disposed opposite each other to form a discharge space between, a plurality of barrier ribs in stripes arranged in parallel on either one of the substrates to partition the discharge space, and wall-like projections lower than the barrier ribs provided in elongate grooves between the barrier ribs, characterized in that the projections are formed by a process comprising:

forming a projection material layer on one substrate;

forming thereon a masking pattern for the projections of a sandblast-resistant material;

forming thereon a barrier rib material layer;

forming thereon a masking pattern for the barrier ribs of a sandblast-resistant material;

and

forming the projections and the barrier ribs simultaneously by [one] a single sandblasting operation.

21. (ONCE AMENDED) A method [for] of fabricating a plasma display panel [as recited in claim 9,] provided with a pair of substrates disposed opposite each other to form a discharge space between, a plurality of barrier ribs in stripes arranged in parallel on either one of the substrates to partition the discharge space, and wall-like projections lower than the barrier ribs provided in elongate grooves between the barrier ribs, characterized in that the projections are formed by a process comprising: applying a projection material through a nozzle onto boundary areas between discharge cell areas in the elongate grooves between the barrier ribs on one substrate on which the barrier ribs are formed.

CERTIFICATION

I hereby certify that this correspondence was deposited with the United States Patent and Trademark Office by registered mail in an envelope addressed to the Office of Patents and Trademarks, Washington, D.C.

On September 12, 2002  
By: Michael M. Halsey  
Date: September 12, 2002